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Doctoral career path studies: Exchanging paradigms across international borders

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Abstract
This article explores four doctoral education studies conducted in the United States (US), the United Kingdom (UK) and France, and by the Organisation for Economic Co-operation and Development (OECD), which were presented at the 2012 European Alliance on Research Career Development workshop. These studies were directed towards research funding agencies elaborating new theoretical and methodological insights in this emerging field of doctoral career path studies. What questions did these studies choose to foreground? The studies revealed a general silence about matters of power, hierarchy and marginalisation of doctoral education instead highlighting more pragmatic operational and institutional considerations. The article generates a set of expanding questions to ask about how the agendas of doctoral career path studies are being constructed and in whose interests they are designed and supported. The article also offers alternate conceptions of the notion of development, freedoms and significance when evaluating such research agendas, especially for developing world contexts.

Keywords: doctoral career path studies, career tracking, career outcomes studies, paradigms of research

DOCTORAL EDUCATION: QUO VADIS?
The nature of doctoral education, doctoral output of the higher education system and its contribution to both the knowledge economy and the wider society have come under the spotlight in recent times across many worldwide contexts, including: Australia (Thompson et al 2001), Europe (Casey 2009; Kehm 2006), the United States (US) (Nerad and Heggelund 2008) and South Africa (Deacon, Osman and Buchler 2009). Advances in the economy are seen to be reliant on advancing scientific, technical, social, educational, organisational, environmental and health innovations. It is expected that postgraduate degree awardees would bear this responsibility by exercising multi-disciplinary collaborations across institutional, regional, national and international borders (Nerad 2012). However, are higher education institutions (HEIs) producing these activators of the economy? Are governments, industries,
businesses, philanthropic organisations and HEIs able to satisfy a return on investment in supporting postgraduate education? In some contexts the state investment of taxpayers’ resources in (postgraduate) higher education is questioned especially when investment is argued to be more valuably directed either towards other more tangible outcomes, such as job-creation, or addressing social and employment needs.

In his review of the literature on doctoral education, Wolhuter (2011, 126) identifies in both the international and South African research literature the major deficiencies in the corpus as being the lack of any ‘empirical validation of the claimed social rates of return to doctoral education, an absence of the empirical reach or scholarly contribution/impact of doctoral education, and the inadequacies of the paradigms employed to research doctoral education’. He notes that the South African literature is limited, comparatively, in its analysis of a ‘tracking’ of doctoral graduates post their graduation and into their research careers. The literature provides little insight into whether the claims of up-scaling doctoral education and doctoral graduate output would yield the claimed return of investment that policy-makers and decision-makers were advocating as part of new discourses within higher education.

The South African research corpus is focused on the under-productivity of the system (ASSAf 2010; CREST 2009) emphasising students’ access to postgraduate education, and their readiness for (postgraduate) higher education studies; the kinds of educational models that could be used in doctoral education and supervision (De Lange, Pillay and Chikoko 2011; Govender and Dhunpath 2011; Vithal and Samuel 2011); and the broad brushstrokes outlining the kinds (theoretically, conceptually and methodologically) of postgraduate studies already within the body of master’s and doctoral studies (Balfour et al 2008). These foci might arguably be driven by conceptions of expanding the input and output ‘productivity’ of the system of doctoral education given the poor international comparative base of the South African education system and its links to its apartheid and colonised histories. Their agendas might be driven by a reconstructive, transformative goal to redress the imbalances across different institutional contexts and their skewed racial and gendered participation in specific disciplines.

These research studies constitute a necessary baseline status quo of the system of doctoral education in South Africa. However, they are limited in their methodological orientations and choices of phenomena to research into doctoral education. What interests me in the study of doctoral education is: How are the agendas of the studies being constructed, by whom and for what purposes? What goes under the microscope of the researchers who are engaging in doctoral education studies? In whose interests are particular kinds of research questions being developed? Who is asking these questions? To whom or what are they responding? What drives the research questions? And whose interests are likely to be served via the agendas that they choose as foci for their studies? These are the issues that I wish to explore in this article.
DEVELOPING THE LENS: LUXEMBOURG 2012

Researching the research

The article is driven by concluding comments reflecting on the agenda of a workshop held under the auspices of the ‘European Alliance on Research Career Development’ of the European Science Foundation (ESF) in 2012 (Samuel 2012). This alliance comprises national research funding agencies in countries across Europe. Previous meetings of the research alliance (first established in 2005) chose to focus on the chartering of student recruitment and mobility across national borders, establishing networks to address brain drain/brain circulation within the European Union (EU), and exploring means to promote systemic analysis of inter-country mobility of researchers in the spirit of multinational (European) co-operation. The specific aim of the 2012 workshop was to review international studies regarding tracking research careers of doctoral graduates; to feature a mix of theoretical and practical methodological initiatives and their findings of recent studies in career tracking; and to provide opportunities for collaboration of research funding agencies, institutions, regions or countries to conceptualise and (re)design future doctoral career path studies (see Joint European Science Foundation and Luxembourg National Research Fund Report 2012).

In the article I will present four studies that were presented at this workshop. They constitute possibilities for questioning what further research within the South African context (and perhaps more broadly) could pursue and how. The dominance of the econometric discourses in the paradigms of research is exposed in this analysis providing openings to ask deeper questions in our research endeavours. I conclude the article with reflecting on how different conceptions of ‘development’ challenge the dominant econometric discourses, opening up new possibilities for researching doctoral education and tracer study research.

COMPARATIVE INTERNATIONAL DOCTORAL TRACKING STUDIES

United States

Debunking myths about doctoral career paths

Nerad (2012) from the Centre for Innovation and Research in Graduate Education (CIRGE), University of Washington, Seattle, US, presents the findings of three national CIRGE studies of doctoral educational outcomes and career paths. The surveys were one-time studies administering article and on-line surveys to PhD graduates five to ten years after degree completion. The studies also probed participants through telephonic interviews. They were conducted over the period from 1977 to 2006, each focusing on different clusters of disciplines of varying sample sizes: the PhDs – Ten Years Later (1997) study tracked 6 100 PhD graduates
into their careers in the following disciplines: Biochemistry, Computer Science, Electrical Engineering, English, Mathematics and Political Science; the *PhD in Arts History* project (2002) surveyed 54 institutions in PhD Arts History programmes; and the *Social Sciences PhDs – Five+ years out* (2006) study surveyed 65 universities’ PhD graduates in Anthropology, Communication, Geography, History, Sociology and Political Science. This interest in tracking PhD students in the US, Nerad (2012) suggests, is part of the agenda of *institutional comparability* rankings among US research universities in light of the periodic (every ten years) assessment of doctoral programmes by the US National Research Council (NRC). The three surveys were national studies funded by research foundations and provided comparability at the programme level from the viewpoint of curriculum managers, doctoral students and their employers.

Nerad (2012) points to the many myths that characterise the PhD graduate and/or doctoral education in relation to *employment trends*. She seeks to debunk these myths with the empirical data of the tracer studies. Some of these myths around employment trends include the following:

1. All students who study for a doctorate want to become professors.
2. Professorial positions are highly desirable and only the very best doctoral recipients succeed in becoming professors.
3. The career paths of these people are straight-forward and smooth, moving from PhD degree completion to assistant professor, with perhaps two years of postdoctoral fellowship in between, then to associate professor, and on to full professor.
4. Embedded in the above assumption is that everybody who successfully completes their PhD will most likely choose the very best academic job offer, unconstrained by relationship and family concerns (Nerad 2009; Nerad, Aanerud and Cerny 2004; Nerad, Rudd, Morrison and Picciano 2007, 80).

Nerad (2009) argues that these strong mythological conceptions drive the general perceptions of most academics and especially professors who are probably the hardest to dissuade about the myths, especially about employment trends of PhD graduates.

Firstly, in relation to myth 1, she argues that it is true that many, but not all, PhD graduates, after degree completion, do enter the academic world. The study (Nerad et al 2007) revealed that there were differing degrees of interest in pursuing a career in academia from different disciplines: only 19 per cent of Electrical Engineering PhD graduates had academic career ambitions, compared with 32 per cent in Biochemistry, 72 per cent in Political Science and 81 per cent in English studies.

Secondly, it is not always the case that PhD graduates enter academia ‘smoothly’. Many university education Science and Engineering programmes at PhD level work closely with partners within the formal economy to ensure a smooth and relatively quick trajectory into the world of work. Comparatively, in the Social Sciences, for example, 75 per cent of the respondents in the study were in stable employment only
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four years after completing their doctoral degree (Nerad et al 2007). The journey into academia is more long-winding. Some start their academic careers either as postdoctoral students/candidates, or on temporary annual appointments, and others start as assistant professors in a path that leads to a secure professor position if they receive ‘tenure’, that is, are reviewed favourably by their peers.

Thirdly, doctoral candidates may report a preference for a job in academia, but these jobs are increasingly limited. Several forces coalesce in relation to the entry into academia after PhD graduation. Many professors see their engagement in supervision of students as a form of succession planning: aiming to replace themselves within the academia. This is driven by an expectation that PhD graduates are exclusively interested in pursuing an academic career. Conservative academic institutions seem interested to replicate the current typologies of their present staff (whether in terms of theoretical, epistemological or social interests). Consequently, gaining employment in higher education is not independent of iniquitous patterns of inclusion and exclusion during the hiring of new academics.

Fourthly, finding more permanent employment in academia also varies according to the specific biographies of students (their gender, age and nationality). This is evident in how men and women are able to exercise their entry into the world of employment opportunities differently based on family and career responsibilities. For example, 61 per cent of women with PhDs had partners who were highly educated (a PhD, master’s degree or junior degree), compared with 27 per cent of men. Women PhD graduates tended to live with a person who was less likely to be able to uproot from their present jobs and find equivalent employment elsewhere. Men, by contrast, had more flexibility to be career mobile than women. Women were constrained by their partner’s inability to shift location to alternate employment opportunities at similar levels elsewhere. This unfairly jeopardises women’s ability to exercise doctoral career employment tracks more readily.

The tracking studies revealed that Social Science PhD graduates usually do enter into a range of employment beyond the narrow confines of the disciplines of their doctoral study, venturing out to exercise influence in a wide sphere of possibilities. Do the questions being probed in doctoral career tracking studies reflect these complex levels of correspondence between the doctoral study and the nature of the world of work? Many employers expect direct correspondence between PhD training and the world of work. They tend to promote unfairly the notion of the university system as an ivory-towered institution, especially when they themselves are unfamiliar with the training of systematic research inquiry that most PhDs entail. False interpretations of the competences being developed in the PhD programme therefore emanate, unfairly critiquing the value of the PhD graduate.

Therefore, myths 2 and 3 need to be either debunked or re-formulated to acknowledge a range of contextually specific issues: for example, the specific marketplace and hiring patterns of the particular disciplines, and the specific biographical characteristics of graduates in different disciplines. The ability of taking up career possibilities post-PhD is also factored by personal and familial constraints.
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When considering the translation of PhD competences into the workplace, one also needs to draw distinctions between different kinds of PhD or doctoral education programmes, including the form of a professional doctorate that is more closely aligned with the everyday operational world of professional practice rather than those PhDs which feature exclusively an abstract theoretical and philosophical exposition.

Doctoral career studies focus not only (as above) on employment trends, but also on graduates’ reflections on the quality of doctoral education. US graduate schools, that have existed since the early 20th century, spanning across different departmental disciplinary structures, pay institutional attention to the quality of services offered to students at all levels of their career development as researchers, including accessing funding, supporting their research supervision, and providing access routes and methods for employability (within and outside the academic).

In all three studies, surprisingly, graduate students were predominantly satisfied with the quality of doctoral supervision they received from their supervisors especially with regard to the specific topic of their dissertations. However, what graduates most frequently complained about was the lack of broader attention that supervisors were able to offer with respect to enabling students to deal with personal, emotional, social, familial (usually gendered) and economic challenges that arise during a doctoral education. They also would have preferred more direct support with respect to team-work and collaborative action in research. Nerad (2012) cautions that more fine-grained analysis needs to be conducted to generate the range of interventions that are required during doctoral studies, not all of which perhaps can be offered by the supervisor in an HEI alone.

Concerns about gendered engagement of students, from different cultural or national backgrounds, has relevance in foregrounding the kinds of conceptions of ‘doctoral support’ or professional visibility that needs to be offered by institutions, funders and potential employers of PhD graduates.

In the Social Science PhDs – Five+ Years Out study, Nerad et al (2007, 6) summarise that

universities need to recognise that most men and women are in relationships, many with children, and this situation influences PhD careers; universities need to pay more attention to connecting research training with teaching, writing, and publishing; and universities need to bring professional development competencies such as teamwork, working in interdisciplinary contexts, grant writing, and managing people and budgets, from the margins to the center of PhD education.
Organisation for Economic Co-operation and Development

*Searching for international comparability*

An international comparability study of the Organisation for Economic Co-operation and Development (OECD) PhD mobility (Misu 2012) raised questions about whether it was possible to generate an international comparability *survey instrument* to aid dialogue across (inter)national contexts. He suggested the dialogue about what this ‘grid of possibilities’ was, was perhaps more important than the research instrument itself, that is, that attention should be drawn to the framework of questions (alongside operationalised definitions of terminology) that are assembled when designing doctoral career studies internationally. The article revealed the difficulties of using comparable data from different country contexts where operational definitions of what constituted a registered doctoral student were opened and varied. This pointed to the large variance of forms and models of doctoral education, each characterised by country, institutional or programmatic specifics. To synthesise the data from these various forms into an international comparative instrument or table is an exercise of hegemonising the variety to capitulate to the dominant discourse. The workshop was concerned about whose version and operational definitions of doctoral education would be privileged in the creation of such an international comparative research instrument.

One example of the difficulties was revealed in the context of some doctoral programmes within the German context where doctoral candidates usually operate alongside a master supervisor for many years as a type of ‘Research Assistant’ who is paid as an employee mostly with benefits to a funded project. This position is unlike the US research assistants who have student status and are paid a part-time student salary. German researcher assistants, mostly in Science and Engineering, are permitted to register as doctoral students only after latitude is granted for them to elaborate independently some part of a research project’s findings. The writing up of the research report is usually done in collaboration with the supervisor or the research team. By contrast, most South African PhD in Education students are part-time students, who operate within the world of everyday professional practice in school settings. Their everyday linkage to the university-academic ‘laboratory’ is limited.

There is not yet any common agreement about what the *form of a doctorate* could take, with each disciplinary field choosing different benchmarks for understanding the products of doctoral education, its purposes, its length, its emphases and its representation. The form of the doctorate in some fields can be a series of published papers. These papers are usually produced in a relatively short period of time as a sub-set of a larger research project, focusing sometimes, almost exclusively, on the findings and analysis of the data. These nuances will complicate comparability across programmes and institutions when considering the ‘number of years registered as doctoral student’, or ‘time-to-degree completion’ statistical analysis. A seemingly
simple question might obfuscate the complexity of the variety of models of doctoral education and engagement. Although we can observe a convergence of elements of doctoral education around the world (see Nerad 2010, 2011), it is important to question whether harmonising these expectations will lead to a loss of institutional, programmatic and disciplinary autonomy. Similar arguments about the shape and forms of doctoral theses ‘reports’ for the visual or performing arts is another case in point; or the nature, goals and expectations of a professional doctorate as opposed to an academic PhD are raised in this analysis. Comparability and acceptance of different qualification types or programmes rather than equivalence is increasingly being valued (see Wright, Campbell and Garrett 1996 for a discussion of trends towards a European qualifications framework for higher education).

United Kingdom – Cambridge

**Doctoral decision-making, doctoral output and the labour market**

This study reported on the institutional traditions of tracking doctoral careers of the research foundation, VITAE, based at Cambridge University, in the United Kingdom (UK) (Metcalfe 2012). The organisation annually conducts tracer studies that provide comparable data over the three years after completion of doctoral studies noting shifts in the patterns of responses, over the years, to a set of key questions. Destination studies include input and analysis by employers about the quality of the graduates being employed. Similar studies within this umbrella of projects also concern themselves with the institutional structure supporting the doctoral candidate; the curricular and programmatic interventions of doctoral programme designers; and the focusing on the quality of professional skills acquired during the study and its translation into value (or not) in the world of work. The candidates’ expectations of the value of a PhD were also tapped into at different stages. The studies included analysis of a range of disciplines for comparative elucidation.

The study revealed its concern with the motivation for why candidates choose to enrol in PhD studies at particular institutions; when they begin to firm up their conceptions of these purposes; and whether these purposes enacted or realised during the course of their studies as PhD candidates. Additionally, the career path study is a powerful means of prompting deeper understandings into candidates’ decision-making processes when selecting their doctoral institutions and programmes. The study, and others cited earlier, could indirectly provide useful insight to assist HEIs in planning their marketing strategies for recruiting, training and retaining postgraduate students.

It should be noted that these studies reflect the transition of PhD graduates into a stable economic context. It appears that the economic labour market during the times when these studies were conducted was receptive enough to absorb the product of postgraduate education into its fold. This pattern of favourable absorption into the labour market is likely to be affected when there is a downturn in the economy and
jobs and employment become more scarce or contested. Perhaps in the extended longitudinal analysis, it would be interesting to draw inferences about whether the shifting stability of the present (2011–2014) worldwide economy and the markets within the European Union (EU) or internationally influences conceptions of the employment trends and/or the value of a PhD by both employers and the graduates themselves.

It may also be worth comparing whether the economies of the developing world have the same degree of latitude to provide employment for PhD graduates as opposed to increasing the pool of employment to large sectors of the presently un-employed who have fewer or no qualifications. Such considerations may have more to do with the political economy rather than the quest to drive innovation in the economy. Are doctoral education studies designed as a means of analysis of the education system or the economic (labour market) system, or the relationship between both? What is actually being studied in doctoral career path studies? It is necessary to clarify the purpose underpinning doctoral career path studies. Are they concerned about: (a) whether PhD students/candidates are unemployed; (b) whether they find useful what they learned during doctoral studies; (c) whether they are satisfied with their lives; and/or (d) what graduate deans can learn about the approach/transition from the education system to the employment system?

Doctoral education studies could equally be about an analysis of international exchange and border crossing. Whilst the data from the study must surely have revealed patterns of the non-UK citizens within the sample, the presentation did not highlight how patterns of incorporation, marginalisation or inclusion of foreign students were attended to in the tracer analysis of postgraduate studies. For me this is of particular interest since many foreign students are increasingly swelling the ranks of the more prestigious institutions of the North, including many HEIs of the EU. How the foreign student is accommodated in such ‘national/ international institutions’ is increasingly a concern of the globalised village of education.

France

Partnerships with higher education institutions and the workplace

A fourth study from the French context outlined the collaborative partnership model that has existed since 1981 across the French higher education system, the research funders and the contracting companies (Angelier 2012). The HEI is usually the site for the establishment of a ‘laboratory’ within which paid employees of companies conduct their research on behalf of the company but are aided by the expertise of the university lecturing staff. The companies often sponsor the establishment of such ‘laboratories’. The researcher employee is simultaneously a doctoral student. The size of the companies involved in such a collaborative venture range from small (2–10 people ‘industries’) to large-scale companies with large staffing complements exceeding 200. The model spans beyond the domains of the Science
and Engineering fields, and includes social ‘laboratories’ in a range of Humanities, the Arts, Education and professional degrees at both undergraduate and postgraduate levels. The laboratory could equally be established on or off the university campus. The model raises questions about whose responsibility it is to generate the body of knowledge needed to support innovation and development in the workplace, social system, industry or business within which the graduate is likely to find employment. The model also raises questions regarding the autonomy of the higher education system when it is increasingly being burdened with the research and development responsibilities of the industry/business or social enterprises. Are HEIs able to successfully carve up a niche outside of the framed agendas? Is knowledge production compromised in this partnership? Or is this a model of healthy co-operation that fuels the social partnership across a variety of institutional frames? 

Who or what drives the agenda of the research conducted by doctoral candidates?

The career path studies of doctoral graduates in this model paid attention to how, when and where the doctoral graduate is employed after graduation. The host funder and social/business/industry partner is often seen as the driver of the employability of the graduate. However, the analysis of the study revealed that candidates traverse outside of these boundaries that were established in their doctoral studies. Of the approximately 3 850 PhD students surveyed in the study, 39 per cent remained employed after graduation in a large company such as the one to which they were contracted during doctoral studies; 20 per cent remained in small companies; and the remainder entered the academic world. Many candidates aspired to work within larger rather than small-scale companies. Only a small percentage of graduates (1% of those surveyed) were able to venture into private self-generated employment. Nevertheless, in the overall analysis, 70 per cent of the PhD graduates got a job within three months and 90 per cent within six months. Most employment trends are linked in relatively formal contractual obligations as a consequence of the funding sponsorships but graduates are able to expand beyond these confines (Angelier 2012). The relationship between the formal economy and the world of academia is thus a much more close collaboration than the other models described above.

A STEP ASIDE: EXCHANGING PARADIGMS

The above selected studies reveal the complexity of the agenda influencing the nature of doctoral education and of career path studies. The terrain is infused by global, social, economic, cultural and curricular concerns which all compete for attention as the institutional designers make selections about their curricula/programmes. Often the kinds of doctoral education programmes developed are contextually circumscribed offerings addressing the specifics of the country’s or nation’s standing with the labour market, the economy as well as the geo-political climate. Quality doctoral education is understood in relation to the systems of programmatic and institutional reputation. Students choose doctoral programmes that respond to their goals for higher education, but these goals are often themselves neither articulated
nor understood before they commence their studies. The aspirations of doctoral graduates shift over time while they study and may even traverse into new directions after they graduate and enter into the world of work. Many PhD graduates become part of the ‘higher education industry’; others diverge into new careers using their doctoralness in not so easy to ascertain one-to-one correspondence with their disciplinary PhD research foci.

Doctoral candidates on the whole are asking for more attention to be paid to the broader climate that enables a supportive environment when doing doctoral education. This is not always directed towards more ‘disciplinary’ or ‘academic content’ input. Instead doctoral candidates are asking to be recognised as fuller human beings, with multiple responsibilities as members of particular communities, nations, cultures, and genders. Their identities matter in influencing the nature of their success as doctoral candidates. More requests for supportive funding and workplace linkages are being requested. The above studies should be applauded for raising the list of questions about what is studied when students engage with a doctoral career path study; who is studied and how this influences their participation or success; when such doctoral career path studies should be conducted; what the focus of the study is; and how will the quality of the impact of a doctoral qualification be assessed. All of these issues and questions have relevance for doctoral education and national and institutional planning.

The repeated concern raised across all the projects is about the cost of conducting such career path studies and the difficulty of securing and sustaining funding for ongoing studies as a routine part of institutional responsibilities. The precarious future of career path studies is exacerbated by a degree of skepticism from research funders or institutions about whether such studies are indeed worthwhile or cost effective, or methodologically robust enough. The concerns raised about career path studies usually include matters such as the validity of the claims that respondents make when they are interviewed several years after their PhD studies; and the problem of nostalgia or selective memorisation about their PhD studies. This should be balanced against the inappropriateness of asking newly qualified graduates of the value of their qualifications, when the demands of entry into the world of work are still characterised by many early professional learning acclimatisations during which graduates are unlikely, immediately, to see the value of their higher education studies. Doctoral researcher graduates should be constant learners and therefore their degree of confidence of being able to see the value of their original doctoral graduate studies may shift markedly over time. This raises methodological concerns about when the most appropriate time to conduct a reflection on the considered value of a PhD is.

However, what these studies do not adequately focus on is the underlying power dynamics that characterise the programmatic, institutional and national offerings of doctoral education in the global context. The studies do not pay sufficient attention to the dynamics of hegemony which position unquestioningly the developed world HEIs and their agendas as the hallmarks of quality for doctoral education towards
which all HEIs should aspire. Some of these studies do not adequately challenge the agendas which (perhaps unconsciously) drive their interest in doctoral tracer studies. The unexpressed intention is that expansion of the models of the ‘developed’ world into the ‘less developed’ is a form of altruistic benevolence. A harsh critique would suggest, like conceptions of religion were exported in the old colonial project, that the knowledge economy is being exported in a new colonialism. However, both forms of colonial imperialism could arguably be regarded as a search for new markets; for finding means of keeping the colonised natives dependent on the empire’s guiding sources. This is what, I believe, Wolhuter (2011) is arguing (as expressed in the introduction to this article) when he suggests that there is a dearth of analysis of the paradigmatic orientation that underpins the kinds of doctoral education studies. His concerns are that many such studies focus only on presenting the ‘facts’/trends of the data from surveys, but do not delve deeply into the lived experiences of doctoral graduates themselves.

Wolhuter (2011, 133–134) argues further that a research agenda that is driven simply by what Paulston (1977) calls ‘equilibrium paradigms’ (systems theory, human capitalism, modernisation theory and structural functionalism) runs the risk of the candidate not comprehending sufficiently how he/she is implicated in the perpetuation of patterns of privilege and power. A socio-political analysis of the way in which doctoral education, HEIs and the research funding agencies and researchers of doctoral education are implicated in upholding certain norms and patterns of analysis must be conducted in further more sophisticated doctoral tracer studies. One has to factor in an analysis of the neo-liberal discourses that permeate the world; and one must choose to understand how these discourses need to be engaged by both the developed and the developing world. To ignore their invasive influence is to remain as collaborators in injustice and inequity despite the expressed noble intentions of ‘expanding the influence of quality’. Notions of what constitutes quality (doctoral) education would emerge as new questions about hierarchy, knowledge exclusion systems, and marginalisation of discourses feature more prominently in research designs. The relationship between the privileged and the alienated must be infused into the research designs of doctoral tracer studies if they are to contribute to realising a more just global society.

**DEVELOPMENT AS FREEDOM: A QUESTION OF SIGNIFICANCE**

The 1998 Nobel Laureate in Economics from India, Amartya Sen, cautions that people should not narrowly understand *development* as the pursuit of individual material wealth alone, nor the growth of the gross national product, nor the rise of industrialisation, nor technological advancement, nor social modernisation in isolation of each other. He suggests that when people think of their development, they need to think of the quality of expanding freedoms that it has engendered. What quality of society has human development yielded? Freedom is not a singular, but a plural concept.
In his book *Development as Freedom*, Sen (1999, 10) suggests that:

Freedoms are not only the primary ends of development, they are also among its principal means. In addition to acknowledging, foundationally, the evaluative importance of freedom, we also have to understand the remarkable empirical connection that links freedoms of different kinds with one another. Political freedoms (in the form of free speech and elections) help to promote economic security. Social opportunities (in the form of education and health facilities) facilitate economic participation. Economic facilities (in the form of opportunities for participation in trade and production) can help generate personal abundance as well as public resources for social facilities. Freedoms of different kinds can strengthen one another [my emphasis].

It is necessary to look critically at how South Africa’s doctoral research studies, doctoral education and doctoral career making processes are implicated in introducing the quality of freedoms in society. This echoes the beliefs of the Turkish scholar, activist and philosopher, Gülen (2011), who argues that people’s everyday actions need to balance the demands of the self and society, of the individual and the collective, the practical and the spiritual, the mundane and the eternal, the present and the future (Çetin 2011).

Are the current doctoral education candidates in South Africa embracing their responsibilities for the local and global force field of ideas towards realising greater freedoms? How can *significance* in doctoral research be developed? How can South African doctoral research be assured to be contributing to a ‘worthwhileness of scholarship’ including practical, personal, emotional, clinical and theoretical significance (Jansen 2011, 139)? In large measure, South Africa’s dominant discourse of the ‘worthwhileness’ of doctoral education is couched in econometric terms (return-on-investment discourses), promoted either by individuals, institutions or nation states.

How do funders of doctoral education enable doctoral graduates, their course designers and their funders to exercise their freedoms to execute significant research in all its multiplicity? This complexity of interrelated concerns should dominate any future doctoral career path study agendas.

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NOTES
1. This article was first presented as a paper at an inaugural professorial address on 9 October 2012. An abbreviated version appeared in the Mail and Guardian under the title ‘Highest degree needs doctoring: Post-doctoral career paths and the social value of PhDs need better research’. In Getting Ahead: Tertiary debate and postgraduate study. Supplement to the Mail and Guardian, 2 to 8 November 2012: 1–3.
2. In the attempt to transform the historical apartheid racialised composition of South African universities, the Employment Equity Act (1998) deliberately seeks redress of particular marginalised race and gender groups in the employment process (Department of Labour 2004).

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